

**CCE RF/PF/RR/PR/NSR/NSPR
FULL SYLLABUS**

A

ಕರ್ನಾಟಕ ಶಾಲಾ ಪರೀಕ್ಷೆ ಮತ್ತು ಮೌಲ್ಯನಿರ್ಣಯ ಮಂಡಲಿ, ಮಲ್ಲೇಶ್ವರಂ, ಬೆಂಗಳೂರು - 560 003

**KARNATAKA SCHOOL EXAMINATION AND ASSESSMENT BOARD,
MALLESHWARAM, BENGALURU - 560 003**

ಮಾರ್ಚ್/ಏಪ್ರಿಲ್ 2024 ರ ಪರೀಕ್ಷೆ - 1

MARCH/APRIL 2024 EXAMINATION - 1

ಮಾದರಿ ಉತ್ತರಗಳು

MODEL ANSWERS

ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E (Phy)**

CODE NO. : **83-E (Phy)**

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ಭೌತ ವಿಜ್ಞಾನ, ರಸಾಯನ ವಿಜ್ಞಾನ ಮತ್ತು ಜೀವ ವಿಜ್ಞಾನ / **Physics, Chemistry & Biology**)

(ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / ಖಾಸಗಿ ಅಭ್ಯರ್ಥಿ / ಶಾಲಾ ಪುನರಾವರ್ತಿತ ಅಭ್ಯರ್ಥಿ / ಖಾಸಗಿ ಪುನರಾವರ್ತಿತ
ಅಭ್ಯರ್ಥಿ / ಎನ್.ಎಸ್.ಆರ್. / ಎನ್.ಎಸ್.ಪಿ.ಆರ್.)

(**Regular Fresh / Private Fresh / Regular Repeater / Private Repeater / NSR / NSPR**)

(ಭೌತಶಾಸ್ತ್ರ / **Physics**)

(ಇಂಗ್ಲಿಷ್ ಮಾಧ್ಯಮ / **English Medium**)

ದಿನಾಂಕ : **30. 03. 2024**]

[ಗರಿಷ್ಠ ಅಂಕಗಳು : **80**

Date : 30. 03. 2024]

[**Max. Marks : 80**


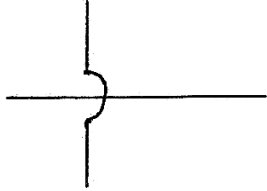
PART - A

(**Physics**)

Qn. Nos.	Value Points	Total
I.	Multiple choice questions :	3 × 1 = 3
1.	Element used in the solar cell is (A) carbon (B) silicon (C) phosphorous (D) sulphur Ans. : (B) silicon	1

CCE RF/PF/RR/PR/NSR/NSPR(A)/666/018 (MA)-PHY

[Turn over

Qn. Nos.	Value Points	Total
2.	<p>In an electric circuit to get an equivalent resistance R_s four resistors of $2\ \Omega$ each are first connected in series. Later to get an equivalent resistance of R_p the same resistors are connected in parallel. Then the ratio of R_s / R_p is</p> <p>(A) 16 : 1 (B) 2 : 1 (C) 4 : 1 (D) 8 : 1</p> <p>Ans. :</p> <p>(A) 16 : 1</p>	1
3.	<p>Right statement regarding the colour of the scattered sunlight and the size of scattering atmospheric particles is</p> <p>(A) small particles scatter red colour (B) big particles scatter blue colour (C) big particles scatter violet colour (D) too larger particles scatter all colours equally</p> <p>Ans. :</p> <p>(D) too larger particles scatter all colours equally</p>	1
II. Answer the following questions :		2 × 1 = 2
4.	<p>Write the symbols of the following components used in an electric circuit :</p> <p>i) Combination of two cells</p> <p>ii) Wires crossing without joining.</p> <p>Ans. :</p> <p>i) </p> <p>ii) </p>	<p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>1</p>
5.	<p>Can an electric heater of 2kW be connected to a domestic circuit rated 15 A and has a potential difference of 220V ? Support your answer.</p> <p>Ans. :</p> <p>★ Can be connected</p> <p>★ Because the rate of electric circuit is less than 15 A.</p>	<p>$\frac{1}{2} + \frac{1}{2}$</p> <p>1</p>

Qn. Nos.	Value Points	Total
III.	<p>Answer the following questions : 3 × 2 = 6</p> <p>6. What is spectrum of white light ? Name any two phenomenon that occur in the atmosphere due to the refraction of light.</p> <p style="text-align: center;">OR</p> <p>What is cataract of eye ? What is the near point and far point of the human eye with normal vision ?</p> <p><i>Ans. :</i></p> <p>The band of coloured components of a light beam formed by the splitting of light through glass prism is called spectrum of light. 1</p> <p style="padding-left: 40px;">Phenomena that occur due to the refraction of light :</p> <ul style="list-style-type: none"> ★ Twinkling of stars ★ Advanced sunrise and delayed sunset ★ Rainbow formation. $\frac{1}{2} + \frac{1}{2}$ <p style="text-align: center;">OR</p> <p>The crystalline lens of people at old age becomes milky and cloudy. This condition is called cataract. 1</p> <ul style="list-style-type: none"> ★ The near point : 25 cm ★ The far point : Infinity. $\frac{1}{2} + \frac{1}{2}$ <p>7. "Production of nuclear energy is advantageous and also disadvantageous." Clarify this statement with suitable explanation.</p> <p><i>Ans. :</i></p> <p><i>Advantages :</i></p> <ul style="list-style-type: none"> ★ Fission of an atom of uranium gives the energy equivalent to the 10 million times of the energy produced by the combustion of an atom of carbon from coal. $\frac{1}{2}$ ★ Conventional energy sources can be conserved. $\frac{1}{2}$ <p><i>Disadvantages :</i></p> <ul style="list-style-type: none"> ★ Storage and disposal problems of nuclear fuels. ★ High cost of installation ★ It makes environmental contamination. <p style="text-align: right; padding-right: 40px;">(Any two) $\frac{1}{2} + \frac{1}{2}$</p>	<p style="text-align: center;">2</p> <p style="text-align: center;">2</p> <p style="text-align: center;">2</p>

Qn. Nos.	Value Points	Total
<p>8. A person who has a defect of the eye as shown in the below figure purchases a spectacle having lens of -2.0D power. Is this lens suitable to rectify the eye defect of that person ? Analyse.</p> <div data-bbox="416 517 1171 745" data-label="Image"> </div> <p>Ans. :</p> <ul style="list-style-type: none"> ★ This lens is not suitable for that person's defect of eye. $\frac{1}{2}$ ★ Light rays from a closeby object are focussed at a point behind the retina. $\frac{1}{2}$ ★ Therefore it is farsightedness and it is corrected by using a convex lens of appropriate power in spectacle. $\frac{1}{2}$ ★ Lens of -2.0 D power is a concave lens and that does not rectify this defect. $\frac{1}{2}$ 		2
<p>IV. Answer the following questions : $3 \times 3 = 9$</p>		
<p>9. Draw the ray diagram of image formation when the object is kept at $2F_1$ of the convex lens. With the help of ray diagram mention the position and the nature of the image formed. (F_1 : Principal focus of the lens)</p> <p>Ans. :</p>	<div data-bbox="389 1599 1190 1832" data-label="Image"> </div> <p>Position of the image : at $2F_2$ — $\frac{1}{2}$</p> <p>Nature of the image : Real and inverted — $\frac{1}{2}$</p>	3

Qn. Nos.	Value Points	Total
10.	<p>200J of heat is produced each second in a 8Ω resistance. Find the potential difference across the resistor.</p> <p style="text-align: center;">OR</p> <p>An electric refrigerator rated 300W operates 6 hours in a day. What is the cost of the energy to operate it for 30 days at Rs. 7.00 per kWh ?</p> <p>Ans. :</p> <p>Solution :</p> $H = 200 \text{ J}, R = 8 \Omega, t = 1 \text{ s}, V = ?$ $H = I^2 \times R \times t$ $I = \sqrt{\frac{H}{Rt}}$ $I = \sqrt{\frac{200}{8 \times 1}}$ $I = 5 \text{ A}$ <p>Thus the potential difference across the resistor V.</p> $V = I \times R$ $= 5 \text{ A} \times 8 \Omega$ $V = 40 \text{ V}$ <p style="text-align: center;">OR</p> <p>Solution :</p> <p>Total energy consumed by the refrigerator in 30 days would be</p> $300 \text{ W} \times 6 \text{ hours/day} \times 30 \text{ days}$ $= 54000 \text{ Wh}$ $= 54 \text{ kWh}$ <p>Thus the cost of energy to operate the refrigerator for 30 days is</p> $= 54 \text{ kWh} \times \text{Rs. } 7.00 \text{ per kWh}$ $= \text{Rs. } 378.$	<p style="text-align: right;">1</p> <p style="text-align: right;">1</p> <p style="text-align: right;">1</p> <p style="text-align: right;">3</p>
11.	<p>In domestic circuits,</p> <p>i) What are the reasons for overloading ?</p> <p>ii) Explain the working of earth wire.</p> <p style="text-align: center;">OR</p> <p>A coil of insulated copper wire is connected to a galvanometer. What will happen if a bar magnet is</p> <p>i) pushed into the coil ?</p> <p>ii) withdrawn from inside the coil ?</p> <p>iii) held stationary inside the coil ?</p>	<p style="text-align: right;">1 $\frac{1}{2}$</p> <p style="text-align: right;">3</p>

Qn. Nos.	Value Points	Total
	<p>Ans. :</p> <p>i) <i>Reasons for overload</i> :</p> <ul style="list-style-type: none"> ★ When the live wire and neutral wire come into direct contact. $\frac{1}{2}$ ★ Leakage of current in electrical appliances $\frac{1}{2}$ ★ Connecting too many appliances to the single socket. $\frac{1}{2}$ <p>ii) <i>Working of earth wire</i> :</p> <ul style="list-style-type: none"> ★ The metallic body of electrical appliances are connected to the earth wire. If any leakage of current occurs in the electrical appliances, keep their potential difference same as to that of the earth and user may not get severe electric shock. $1\frac{1}{2}$ <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> ★ The needle of the galvanometer deflects. 1 ★ The needle of the galvanometer deflects in the direction opposite to the first 1 ★ The needle of the galvanometer does not deflect needle indicates zero. 1 	3
V.	Answer the following questions :	2 × 4 = 8
12.	<p>a) State the right hand thumb rule. Write any two properties of the magnetic field lines.</p> <p>b) What is solenoid ? How can this be converted into an electromagnet ?</p>	
	<p>Ans. :</p> <p><i>Right hand thumb rule</i> :</p> <p>a) When you are holding a current carrying conductor such that the thumb points towards the direction of current then your fingers will wrap around the conductor in the direction of the field lines of the magnetic field. 1</p> <p>Properties of the magnetic field lines :</p> <ul style="list-style-type: none"> ★ emerge from north pole and merge at the south pole. ★ closed curves ★ never intersect each other ★ have magnitude and direction. <p style="text-align: right;">(Any two) $\frac{1}{2} + \frac{1}{2}$</p>	

Qn. Nos.	Value Points	Total									
13.	<p>b) <i>Solenoid</i> : A coil of many circular turns of insulated copper wire wrapped closely in the shape of cylinder is called a solenoid. 1</p> <p>Current carrying solenoid can be used to magnetise a piece of magnetic material like soft iron when placed inside the coil. 1</p> <p>a) State two laws of reflection of light.</p> <p>b) Write any two differences between concave mirror and convex mirror.</p> <p><i>Ans. :</i></p> <p>a) Laws of reflection of light :</p> <ul style="list-style-type: none"> ★ The angle of incidence is equal to the angle of reflection 1 ★ The incident ray, the normal to the mirror at the point of incidence and the reflected ray all lie in the same plane. 1 <p>b)</p>	4									
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;"><i>Concave mirror</i></th> <th style="text-align: center;"><i>Convex mirror</i></th> </tr> </thead> <tbody> <tr> <td>★ Reflecting surface is curved inwards</td> <td>★ Reflecting surface is curved outwards</td> </tr> <tr> <td>★ Size of the image may be small, big and equal to that of the object.</td> <td>★ Size of the image is always small and erect.</td> </tr> <tr> <td>★ Virtual and real images are formed</td> <td>★ Always virtual image is formed</td> </tr> <tr> <td>★ It is used in torches, search lights and vehicles' headlight, shaving mirror etc.</td> <td>★ It is used in rear-view side mirror of vehicles.</td> </tr> </tbody> </table> <p style="text-align: right;">(Any two) 1 + 1</p>		<i>Concave mirror</i>	<i>Convex mirror</i>	★ Reflecting surface is curved inwards	★ Reflecting surface is curved outwards	★ Size of the image may be small, big and equal to that of the object.	★ Size of the image is always small and erect.	★ Virtual and real images are formed	★ Always virtual image is formed	★ It is used in torches, search lights and vehicles' headlight, shaving mirror etc.
<i>Concave mirror</i>	<i>Convex mirror</i>										
★ Reflecting surface is curved inwards	★ Reflecting surface is curved outwards										
★ Size of the image may be small, big and equal to that of the object.	★ Size of the image is always small and erect.										
★ Virtual and real images are formed	★ Always virtual image is formed										
★ It is used in torches, search lights and vehicles' headlight, shaving mirror etc.	★ It is used in rear-view side mirror of vehicles.										

**CCE RF/PF/RR/PR/NSR/NSPR
FULL SYLLABUS**

A

ಕರ್ನಾಟಕ ಶಾಲಾ ಪರೀಕ್ಷೆ ಮತ್ತು ಮೌಲ್ಯನಿರ್ಣಯ ಮಂಡಲಿ, ಮಲ್ಲೇಶ್ವರಂ, ಬೆಂಗಳೂರು - 560 003

**KARNATAKA SCHOOL EXAMINATION AND ASSESSMENT BOARD,
MALLESHWARAM, BENGALURU - 560 003**

ಮಾರ್ಚ್/ಏಪ್ರಿಲ್ 2024 ರ ಪರೀಕ್ಷೆ - 1

MARCH/APRIL 2024 EXAMINATION - 1

ಮಾದರಿ ಉತ್ತರಗಳು

MODEL ANSWERS

ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E (Chem.)** CODE NO. : **83-E (Chem.)**

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ಭೌತ ವಿಜ್ಞಾನ, ರಸಾಯನ ವಿಜ್ಞಾನ ಮತ್ತು ಜೀವ ವಿಜ್ಞಾನ / **Physics, Chemistry & Biology**)

(ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / ಖಾಸಗಿ ಅಭ್ಯರ್ಥಿ / ಶಾಲಾ ಪುನರಾವರ್ತಿತ ಅಭ್ಯರ್ಥಿ / ಖಾಸಗಿ ಪುನರಾವರ್ತಿತ
ಅಭ್ಯರ್ಥಿ / ಎನ್.ಎಸ್.ಆರ್. / ಎನ್.ಎಸ್.ಪಿ.ಆರ್.)

(**Regular Fresh / Private Fresh / Regular Repeater / Private Repeater / NSR / NSPR**)

(ರಸಾಯನಶಾಸ್ತ್ರ / **Chemistry**)

(ಇಂಗ್ಲಿಷ್ ಮಾಧ್ಯಮ / **English Medium**)

ದಿನಾಂಕ : **30. 03. 2024**]

[ಗರಿಷ್ಠ ಅಂಕಗಳು : **80**

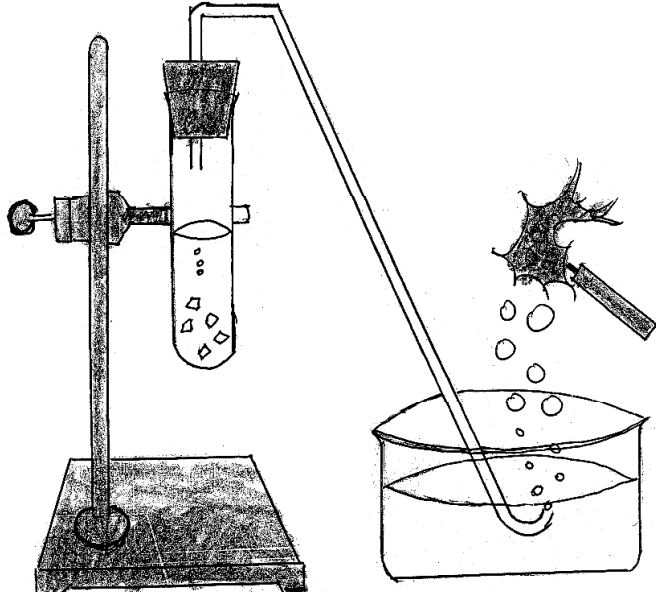
Date : 30. 03. 2024]

[**Max. Marks : 80**

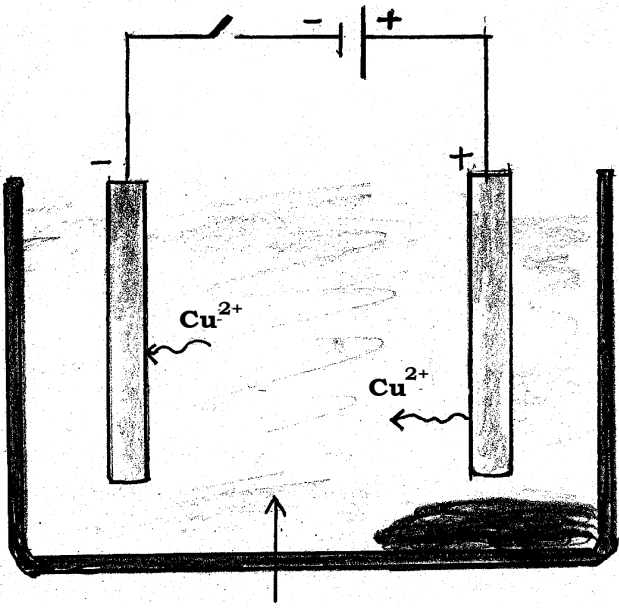
**PART - B
(Chemistry)**

Qn. Nos.	Value Points	Total
VI.	Multiple choice questions :	3 × 1 = 3
14.	Organic compounds obtained by the reaction between carboxylic acid and alcohol are (A) Aldehydes (B) Ketones (C) Esters (D) Hydrocarbons Ans. : (C) Esters	1

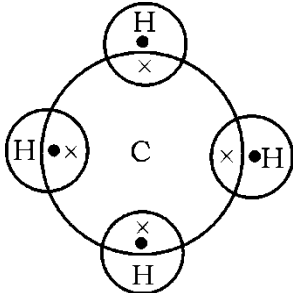
Qn. Nos.	Value Points	Total
15.	<p>Ferrous sulphate crystals lose green colour when heated. Because this compound</p> <p>(A) decomposes into simpler products</p> <p>(B) loses water molecules</p> <p>(C) releases sulphur dioxide gas</p> <p>(D) produces brown fumes</p> <p>Ans. :</p> <p>(B) loses water molecules</p>	1
16.	<p>One limitation of Mendeleev's periodic table is, this classification</p> <p>(A) was applicable only upto calcium</p> <p>(B) suitable only for lighter elements</p> <p>(C) has not provided definite position for noble gases</p> <p>(D) has not assigned a fixed position to hydrogen</p> <p>Ans. :</p> <p>(D) has not assigned a fixed position to hydrogen</p>	1
VII.	Answer the following question :	3 × 1 = 3
17.	<p>Write any two uses of washing soda.</p> <p>Ans. :</p> <p>i) In glass, soap and paper industries.</p> <p>ii) In the manufacture of sodium compounds such as borax.</p> <p>iii) As a cleaning agent for domestic purposes.</p> <p>iv) For removing permanent hardness of water.</p> <p>(any two)</p>	$2 \times \frac{1}{2}$ 1
18.	<p>What are 'periods' and 'groups' in modern periodic table ?</p> <p>Ans. :</p> <p>Horizontal rows of modern periodic table are periods and vertical columns are groups.</p>	$\frac{1}{2} + \frac{1}{2}$ 1

Qn. Nos.	Value Points	Total										
19.	<p>Observe the electronic configurations of four elements given in the following table and answer the below given question :</p> <table border="1" data-bbox="459 436 1134 741"> <thead> <tr> <th data-bbox="459 436 735 501"><i>Elements</i></th> <th data-bbox="735 436 1134 501"><i>Electronic configuration</i></th> </tr> </thead> <tbody> <tr> <td data-bbox="459 501 735 566"><i>e</i></td> <td data-bbox="735 501 1134 566">2, 8, 2</td> </tr> <tr> <td data-bbox="459 566 735 631"><i>f</i></td> <td data-bbox="735 566 1134 631">2, 7</td> </tr> <tr> <td data-bbox="459 631 735 696"><i>g</i></td> <td data-bbox="735 631 1134 696">2, 8, 8, 1</td> </tr> <tr> <td data-bbox="459 696 735 741"><i>h</i></td> <td data-bbox="735 696 1134 741">2, 8, 7</td> </tr> </tbody> </table> <p>Arrange these elements in the decreasing order of their atomic radii (atomic size).</p> <p><i>Ans. :</i></p> $g > e > h > f$	<i>Elements</i>	<i>Electronic configuration</i>	<i>e</i>	2, 8, 2	<i>f</i>	2, 7	<i>g</i>	2, 8, 8, 1	<i>h</i>	2, 8, 7	1
<i>Elements</i>	<i>Electronic configuration</i>											
<i>e</i>	2, 8, 2											
<i>f</i>	2, 7											
<i>g</i>	2, 8, 8, 1											
<i>h</i>	2, 8, 7											
VIII.	<p>Answer the following questions : 3 × 2 = 6</p> <p>20. Draw the diagram of the arrangement of apparatus showing the reaction of zinc granules with dilute sulphuric acid and testing hydrogen gas by burning.</p> <p><i>Ans. :</i></p> 	2										

Qn. Nos.	Value Points	Total										
21.	<p>Simultaneously red and blue litmus papers are dipped in the brine solution and in the aqueous product produced by subjecting that solution to electrolysis. What changes do you observe in litmus papers ? Support your answer with reasons.</p> <p style="text-align: center;">OR</p> <p>Observe the pH values of four solutions given in the following table and answer the questions below.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;"><i>Solutions</i> →</th> <th style="text-align: center;"><i>P</i></th> <th style="text-align: center;"><i>Q</i></th> <th style="text-align: center;"><i>R</i></th> <th style="text-align: center;"><i>S</i></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">pH value</td> <td style="text-align: center;">10·0</td> <td style="text-align: center;">13·7</td> <td style="text-align: center;">7·0</td> <td style="text-align: center;">1·2</td> </tr> </tbody> </table> <p>i) Which solution can be used to prepare an antacid ? Why ?</p> <p>ii) Which two solutions can be used to get a neutral salt ? Why ?</p> <p>Ans. :</p> <p>★ No colour change is observed in the litmus papers dipped in the brine solution. Because it is a neutral solution. $\frac{1}{2} + \frac{1}{2}$</p> <p>★ Red litmus paper dipped in aqueous product obtained by electrolysis of brine solution turns to blue colour. $\frac{1}{2}$ Because it is a basic solution. $\frac{1}{2}$</p> <p style="text-align: center;">OR</p> <p>i) Solution 'P' can be used to prepare an antacid. $\frac{1}{2}$ Because it is a mild base. $\frac{1}{2}$</p> <p>ii) Solution 'Q' and 'S' can be used to get a neutral salt. $\frac{1}{2}$ Because 'Q' is a strong base and 'S' is a strong acid. $\frac{1}{2}$</p>	<i>Solutions</i> →	<i>P</i>	<i>Q</i>	<i>R</i>	<i>S</i>	pH value	10·0	13·7	7·0	1·2	2 2
<i>Solutions</i> →	<i>P</i>	<i>Q</i>	<i>R</i>	<i>S</i>								
pH value	10·0	13·7	7·0	1·2								

Qn. Nos.	Value Points	Total
22.	<p>Draw the diagram of arrangement of apparatus showing the electrolytic refining of copper and label 'acidified copper sulphate' solution.</p> <p>Ans. :</p>  <p style="text-align: center;">Acidified copper sulphate solution</p> <p style="text-align: right;">Diagram — $1\frac{1}{2}$ Part — $\frac{1}{2}$</p>	2
IX.	<p>Answer the following questions : 3 × 3 = 9</p> <p>23. a) Identify the substances that are oxidised and reduced in the following chemical reaction :</p> $\text{ZnO} + \text{C} \rightarrow \text{Zn} + \text{CO}$ <p>b) What is rancidity ? Mention any two methods to prevent rancidity.</p> <p>Ans. :</p> <p>a) ZnO — is reduced. $\frac{1}{2}$ C — is oxidised. $\frac{1}{2}$</p>	

Qn. Nos.	Value Points	Total
24.	b) When fats and oils are oxidised, they become rancid and their smell and taste change. 1 ★ Substances which prevent oxidation (antioxidants) are added to food. $\frac{1}{2}$ ★ Keeping food in airtight containers. $\frac{1}{2}$	3
	24. Given below incomplete equation represents a chemical process of converting an unsaturated carbon compound to saturated carbon compound. $\begin{array}{c} \text{H} \quad \text{H} \\ \quad \\ \text{C} = \text{C} \xrightarrow[\text{x}]{\text{y}} \\ \quad \\ \text{H} \quad \text{H} \end{array}$ i) Complete the equation ii) Name the gas 'x' and the substance 'y' iii) What happens if the end products of this reaction reacts with chlorine in the presence of sunlight ? Ans. : i) $\begin{array}{c} \text{H} \quad \text{H} \\ \quad \\ \text{C} = \text{C} \longrightarrow \text{H} - \text{C} - \text{C} - \text{H} \\ \quad \quad \quad \\ \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \end{array}$ 1 ii) x = Hydrogen $\frac{1}{2}$ y = Nickel / Palladium $\frac{1}{2}$ iii) ★ Undergoes substitution reactions. $\frac{1}{2}$ ★ Chlorine replaces hydrogen one by one $\frac{1}{2}$	
25.	a) Carbon could not form C^{4+} or C^{4-} ions. Why ? b) Write the electron dot structure of methane. <p style="text-align: center;">OR</p> a) How micelles are formed during cleansing action of soap ?	

Qn. Nos.	Value Points	Total
	<p>b) Which are the salts responsible for hardness of water ? Detergents are effective even in hard water. Why ?</p> <p>Ans. :</p> <p>a) ★ Could not form C^{4-} by gaining four electrons, because it is difficult for the nucleus with six protons to hold on to ten electrons. 1</p> <p>★ Could not form C^{4+} by losing four electrons because it requires a large amount of energy to remove four electrons. 1</p> <p>b)</p> <div style="text-align: center;">  </div> <p style="text-align: center;">OR</p> <p>a) Micelles are formed by the interaction of ionic end of the soap with water while the carbon chain with the oil. 1</p> <p>b) ★ Calcium and magnesium salts. 1</p> <p>★ Detergents do not form insoluble precipitates with the calcium and magnesium ions in hard water. 1</p>	3
X.	Answer the following question :	1 × 4 = 4
26.	<p>a) How silver and copper articles lose their shining surface ? How galvanisation protects iron articles ?</p> <p>b) Aluminium oxide is an amphoteric oxide. Why ?</p>	

Qn. Nos.	Value Points	Total
	<p><i>Ans. :</i></p> <p>a) Silver articles when exposed to air react with sulphur to form a black layer of sulphur dioxide. 1</p> <p>Copper reacts with moist carbon dioxide in the air to form a green layer of copper carbonate. 1</p> <p>Layer of zinc formed by the galvanisation reacts with oxygen to form a layer of zinc oxide which prevents further oxidation. 1</p> <p>b) Aluminium oxide reacts with both acid and base to form salt and water. 1</p>	4

**CCE RF/PF/RR/PR/NSR/NSPR
FULL SYLLABUS**

A

ಕರ್ನಾಟಕ ಶಾಲಾ ಪರೀಕ್ಷೆ ಮತ್ತು ಮೌಲ್ಯನಿರ್ಣಯ ಮಂಡಲಿ, ಮಲ್ಲೇಶ್ವರಂ, ಬೆಂಗಳೂರು - 560 003

**KARNATAKA SCHOOL EXAMINATION AND ASSESSMENT BOARD,
MALLESHWARAM, BENGALURU - 560 003**

ಮಾರ್ಚ್/ಏಪ್ರಿಲ್ 2024 ರ ಪರೀಕ್ಷೆ - 1

MARCH/APRIL 2024 EXAMINATION - 1

ಮಾದರಿ ಉತ್ತರಗಳು

MODEL ANSWERS

ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E (Bio)**

CODE No. : **83-E (Bio)**

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ಭೌತ ವಿಜ್ಞಾನ, ರಸಾಯನ ವಿಜ್ಞಾನ ಮತ್ತು ಜೀವ ವಿಜ್ಞಾನ / **Physics, Chemistry & Biology**)

(ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / ಖಾಸಗಿ ಅಭ್ಯರ್ಥಿ / ಶಾಲಾ ಪುನರಾವರ್ತಿತ ಅಭ್ಯರ್ಥಿ / ಖಾಸಗಿ ಪುನರಾವರ್ತಿತ
ಅಭ್ಯರ್ಥಿ / ಎನ್.ಎಸ್.ಆರ್. / ಎನ್.ಎಸ್.ಪಿ.ಆರ್.)

(**Regular Fresh / Private Fresh / Regular Repeater / Private Repeater / NSR / NSPR**)

(ಜೀವಶಾಸ್ತ್ರ / **Biology**)

(ಇಂಗ್ಲಿಷ್ ಮಾಧ್ಯಮ / **English Medium**)

ದಿನಾಂಕ : **30. 03. 2024**]

[ಗರಿಷ್ಠ ಅಂಕಗಳು : **80**

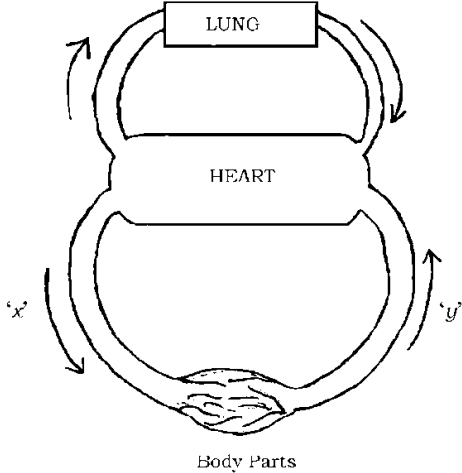
Date : 30. 03. 2024]

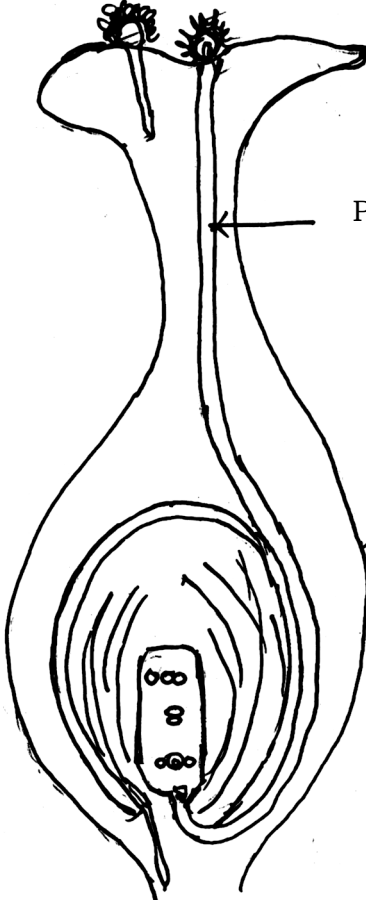
[**Max. Marks : 80**

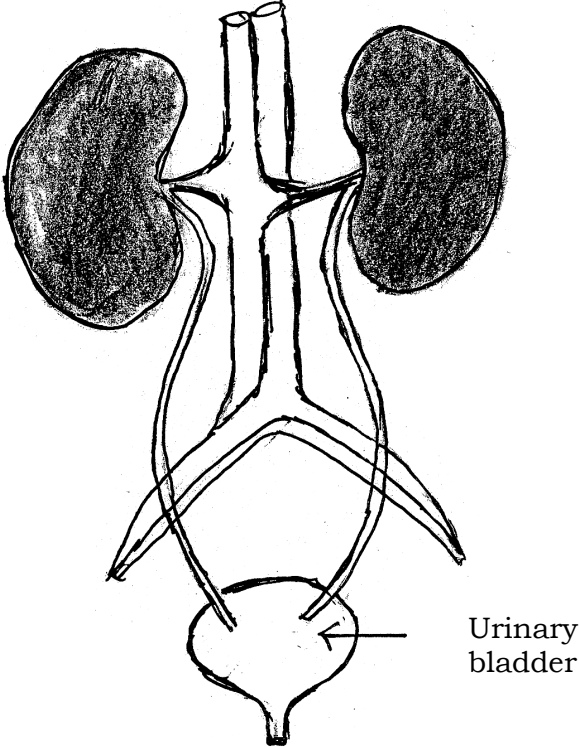
PART - C

(Biology)

Qn. Nos.	Value Points	Total
XI.	Multiple choice questions :	2 × 1 = 2
27.	An illustration for reflex action among the following is, (A) moving a chair (B) feeling the taste (C) withdrawing hands back when unknowingly touch a hot pan (D) clapping at the end of the function Ans. : (C) withdrawing hands back when unknowingly touch a hot pan	1

Qn. Nos.	Value Points	Total
28.	<p>Pea plants with round seeds (RR) are crossed with pea plants with wrinkled seeds (rr). The percentage of plants that are having RR genetic make up in F_2 generation is,</p> <p>(A) 25% (B) 50%</p> <p>(C) 30% (D) 75%</p> <p>Ans. :</p> <p>(A) 25%</p>	1
XII. Answer the following questions :		3 × 1 = 3
29.	<p>“Though ozone is a deadly poison, it is essential for life on the earth.” Justify this statement.</p> <p>Ans. :</p> <p>At the higher levels of the atmosphere ozone shields the earth's surface from ultraviolet radiation from the sun. Thus protects the living organisms on the earth.</p>	1
30.	<p>Schematic representation of blood circulation in the mammals is given below :</p>  <p style="text-align: center;">Body Parts</p> <p>i) Name the blood vessels 'x' and 'y'</p> <p>ii) Which blood vessel has valves ?</p> <p>Ans. :</p> <p>i) x = Artery</p> <p style="padding-left: 40px;">y = Vein</p> <p>ii) Vein has valves.</p>	<p style="text-align: right;">$\frac{1}{2}$</p> <p style="text-align: right;">$\frac{1}{2}$</p> <p style="text-align: right;">1</p>

Qn. Nos.	Value Points	Total
31.	<p>“The number of organisms decreases by reaching higher trophic level of a food chain in an ecosystem.” Why ?</p> <p><i>Ans. :</i></p> <p>Because as reaching to high trophic level of food chain, the amount of available energy goes on decreasing.</p>	1
XIII.	Answer the following questions :	2 × 2 = 4
32.	<p>Draw the diagram showing the germination of pollen on stigma and label ‘pollen tube’.</p> <p><i>Ans. :</i></p>	
	<div style="text-align: center;">  </div>	<p style="text-align: right;">Diagram — $1\frac{1}{2}$</p> <p style="text-align: right;">Part — $\frac{1}{2}$</p> <p style="text-align: right;">2</p>

Qn. Nos.	Value Points	Total
33.	<p>Draw the diagram showing excretory system in human beings and label 'urinary bladder'.</p> <p>Ans. :</p>  <p style="text-align: right;">Urinary bladder</p> <p style="text-align: right;">Diagram — $1\frac{1}{2}$</p> <p style="text-align: right;">Part — $\frac{1}{2}$</p>	2
XIV.	Answer the following questions :	3 × 3 = 9
34.	<p>a) Measures of recharging underground water are better than the storage of water on the surface levels of the ground. How ? Explain.</p> <p>b) Reuse is better than recycling. Why ?</p> <p>Ans. :</p> <p>a) ★ Water does not evaporate, instead spreads out to recharge wells and provides moisture for vegetation.</p>	

Qn. Nos.	Value Points	Total
35.	<p>★ Does not provide breeding grounds for mosquitoes like stagnant water collected in ponds or artificial lakes.</p> <p>★ Does not get contaminated by human and animal waste.</p> <p style="text-align: right;">(Any two) 2 × 1</p> <p>b) Process of recycling uses some energy. 1</p> <p>a) “In human reproduction, the placenta performs a significant role in the development of a foetus into a child.” Justify this statement.</p> <p>b) How can DNA copying be decided as one of the ways of reproduction in lower organisms ?</p> <p>Ans. :</p> <p>a) ★ Provides a large surface area to transport oxygen and glucose from mother to embryo. 1</p> <p>★ Remove waste substances produced by developing embryo by transferring them into mother’s blood. 1</p> <p>b) Two genetically identical daughter cells are produced by the division of nucleus. 1</p>	3
36.	<p>What product is formed in the first step that takes place in the cytoplasm during the respiration in animals ? Write any two differences between aerobic and anaerobic respiration.</p> <p style="text-align: center;">OR</p> <p>a) In what form the waste products are stored in old xylems of plants ?</p> <p>b) How do the products of photosynthesis transport to all parts of the plant ?</p>	3

Qn. Nos.	Value Points	Total								
	<p><i>Ans. :</i></p> <p>★ Glucose of six carbon molecule breaks down into three carbon molecule pyruvate. 1</p> <table border="1" data-bbox="352 495 1225 913"> <thead> <tr> <th data-bbox="352 495 791 568"><i>Aerobic respiration</i></th> <th data-bbox="791 495 1225 568"><i>Anaerobic respiration</i></th> </tr> </thead> <tbody> <tr> <td data-bbox="352 568 791 703">★ Takes place in the presence of oxygen</td> <td data-bbox="791 568 1225 703">★ Takes place in the absence of oxygen</td> </tr> <tr> <td data-bbox="352 703 791 777">★ Energy released is more</td> <td data-bbox="791 703 1225 777">★ Energy released is less</td> </tr> <tr> <td data-bbox="352 777 791 913">★ Produce carbon dioxide, water, and energy are</td> <td data-bbox="791 777 1225 913">★ Produce ethanol, carbon dioxide and energy.</td> </tr> </tbody> </table> <p>(Any two) 1 + 1</p> <p style="text-align: center;">OR</p> <p>a) Waste products are stored as resins and gums in old xylems of plants. 1</p> <p>b) ★ Material like sucrose is transferred into phloem tissue using energy from ATP. 1</p> <p>★ Then Osmotic pressure of the tissue increases and water move inside. $\frac{1}{2}$</p> <p>★ This pressure moves the material in the phloem to tissues which have less pressure. $\frac{1}{2}$</p>	<i>Aerobic respiration</i>	<i>Anaerobic respiration</i>	★ Takes place in the presence of oxygen	★ Takes place in the absence of oxygen	★ Energy released is more	★ Energy released is less	★ Produce carbon dioxide, water, and energy are	★ Produce ethanol, carbon dioxide and energy.	3
<i>Aerobic respiration</i>	<i>Anaerobic respiration</i>									
★ Takes place in the presence of oxygen	★ Takes place in the absence of oxygen									
★ Energy released is more	★ Energy released is less									
★ Produce carbon dioxide, water, and energy are	★ Produce ethanol, carbon dioxide and energy.									
XV.	Answer the following question : 1 × 4 = 4									
37.	<p>a) Which part of the human brain controls the following activities ?</p> <p>i) Involuntary activities</p> <p>ii) Thinking process</p> <p>iii) Posture and balance of the body.</p>	3								

Qn. Nos.	Value Points	Total
	<p>b) What are phytohormones ? Name three phytohormones that promote growth.</p> <p style="text-align: center;">OR</p> <p>a) Name the hormones that control the following activities in man :</p> <p style="padding-left: 20px;">i) Regulating sugar level in the blood</p> <p style="padding-left: 20px;">ii) Regulating the menstrual cycle</p> <p style="padding-left: 20px;">iii) Preparing the body to face situation</p> <p style="padding-left: 20px;">iv) Regulating the metabolism.</p> <p>b) Name any two tropisms that occur in plants. Give an example for each.</p> <p><i>Ans. :</i></p> <p>a) i) Medulla $\frac{1}{2}$</p> <p style="padding-left: 40px;">ii) Cerebrum $\frac{1}{2}$</p> <p style="padding-left: 40px;">iii) Cerebellum. $\frac{1}{2}$</p> <p>b) Chemical compounds that help to coordinate growth, development and responses to the environment. 1</p> <p><i>Phytohormones that promote growth :</i></p> <p>★ Auxins $\frac{1}{2}$</p> <p>★ Gibberellins $\frac{1}{2}$</p> <p>★ Cytokinins. $\frac{1}{2}$</p> <p style="text-align: center;">OR</p> <p>a) i) Insulin $\frac{1}{2}$</p> <p style="padding-left: 40px;">ii) Estrogen $\frac{1}{2}$</p> <p style="padding-left: 40px;">iii) Adrenaline $\frac{1}{2}$</p> <p style="padding-left: 40px;">iv) Thyroxine. $\frac{1}{2}$</p>	4

Qn. Nos.	Value Points	Total
	b) ★ Phototropism : Growth of the shoot towards light ★ Geotropism : Growth of the roots towards earth ★ Hydrotropism : Growth of the roots towards water ★ Chemotropism : Growth of pollen tubes towards ovules. (Any two) 2 × 1 (Consider relevant answer)	4
XVI.	Answer the following question :	1 × 5 = 5
38.	a) Human hands and wings of the bird help to trace the evolutionary relationships. How ? Explain the methods of dating of fossils. b) Changes in the non-reproductive tissues will not inherit. Why ? <i>Ans. :</i> a) Hands of man and wings of bird perform different functions but have same structure. 1 So we can understand that these organisms have common ancestors and modified according to the need in the course of evolution. 1 <i>Dating of fossils :</i> ★ Relative method : The fossils we find closer to the surface are more recent than in deeper layers when the earth is dug. 1 ★ Isotope method : By detecting the ratios of different isotopes of an element present in fossils. 1 b) Change in non-reproductive tissues cannot be passed on to the DNA of germ cells. 1	5